AUTODOC CLUB

How to change engine thermostat on **BMW E39 touring** – replacement guide

VIDEO TUTORIAL



Important!

This replacement procedure can be used for:
BMW 7 (E38) 730d 2.9, BMW 5 Saloon (E39) 530d 3.0, BMW 5 Touring (E39) 530d 3.0, BMW X5 (E53) 3.0 d, BMW 3 Touring (E46) 330d 2.9, BMW 5 Saloon (E39) 525d 2.5, BMW 5 Touring (E39) 525d 2.5, BMW 3 Touring (E46) 330xd 2.9, BMW 3 Saloon (E46) 330xd 2.9, BMW 3 Coupe (E46) 330Cd 3.0, BMW 3 Touring (E46) 330d 3.0, BMW 3 Touring (E46) 330xd 3.0

The steps may slightly vary depending on the car design.

REPLACEMENT: ENGINE THERMOSTAT – BMW E39 TOURING. LIST OF THE TOOLS YOU'LL NEED:



- All-purpose cleaning spray
- Sealant
- Torque wrench
- Combination spanner #16
- Combination spanner #24
- Combination spanner #32
- Drive socket # 7
- Drive socket # 10
- HEX bit No.H5
- Ratchet wrench
- Clip removal tool
- Seal scraper
- Flat screwdriver
- Funnel
- Fluid container
- Crow bar
- Microfibre towel
- Fender cover

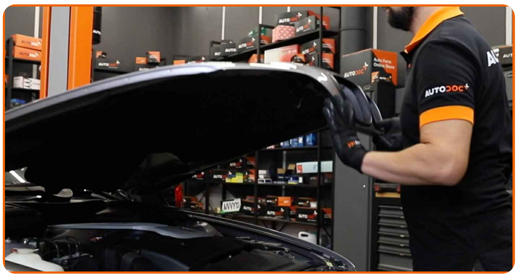
BUY TOOLS

Replacement: engine thermostat – BMW E39 touring. Tip from AUTODOC:

- Check the condition of the coolant every time you replace the thermostat. Change the coolant if necessary.
- Please note: all work on the car – BMW E39 touring – should be done with the engine switched off.

CARRY OUT REPLACEMENT IN THE FOLLOWING ORDER:

1 Open the hood.



2 Use a fender protection cover to prevent damaging paintwork and plastic parts of the car.



3 Unscrew the coolant reservoir cap.



4

Remove the fan shroud clips. Use a clip removal tool.



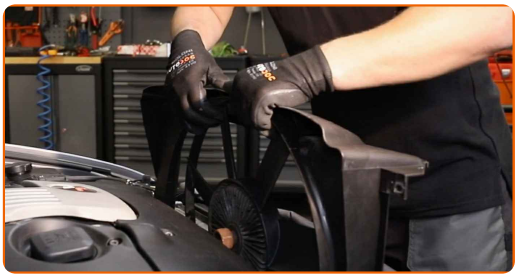
5

Unscrew the cooling fan fastener. Use a combination spanner #32 (2 pieces).



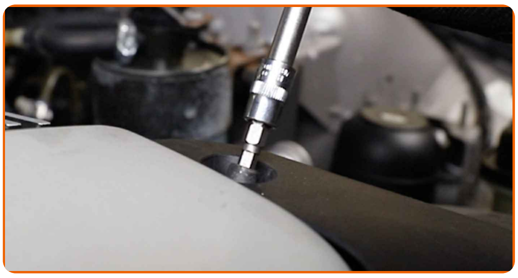
6

Remove the fan shroud. Remove the cooling fan.



7

Unscrew the engine cover fastener. Use HEX No.H5. Use a ratchet wrench.



8 Remove the engine cover.



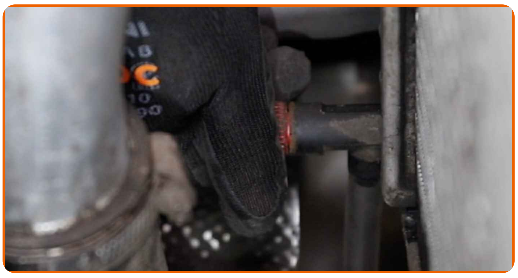
AUTODOC recommends:

- Replacement: engine thermostat – BMW E39 touring. Do not use excessive force when removing the part as this may damage it.

9 Prepare a container for fluids.



10 Open the coolant drain tap.



11 Drain the coolant from the engine.



Replacement: engine thermostat – BMW E39 touring. Tip from AUTODOC experts:

- Caution! The coolant can be very hot.
- Wear gloves to prevent contact with hot liquid.
- All work should be done with the engine stopped.
- Wait until the coolant has completely flowed out of the drain hole.

12 Close the coolant drain tap.

13 Unscrew the intercooler pipe clamp. Use a drive socket #7. Use a ratchet wrench.



14 Remove the intercooler hose.



15 Unscrew the fastener of the coolant hose clamp. Use a drive socket #10. Use a ratchet wrench.



16 Pull aside the V belt tensioner pulley. Use a combination spanner #16.



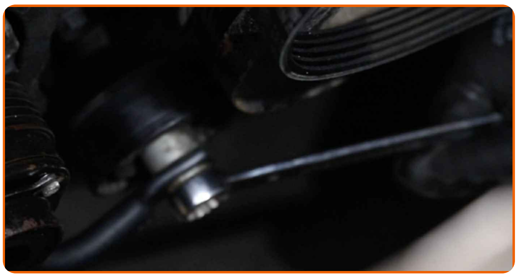
17 Remove the V belt.



Replacement: engine thermostat – BMW E39 touring. Professionals recommend:

- Check the condition of the tensioner pulley and idler pulley. Replace them if necessary.

18 Return the tensioner pulley to its initial position.



19 Pull aside the V-ribbed belt tensioner pulley. Use a combination spanner #16.



20 Remove the V-ribbed belt.



Replacement: engine thermostat – BMW E39 touring. AUTODOC recommends:

- Check the condition of the tensioner pulley and idler pulley. Replace them if necessary.

21 Return the tensioner pulley to its initial position.



22 Loosen the coolant hose clamp.



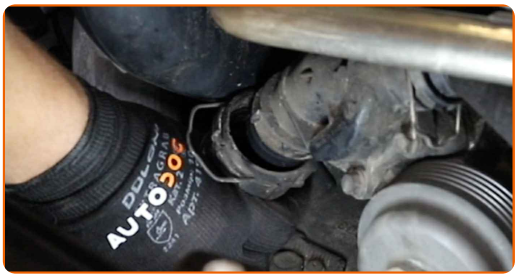
23 Detach the coolant hose. Use a crowbar.



24 Loosen the coolant hose clamp.



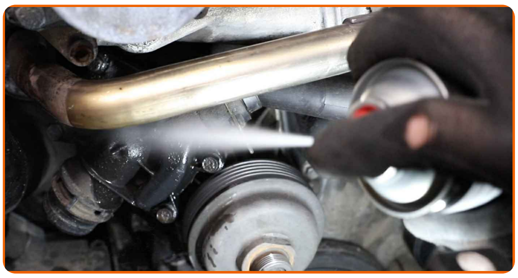
25 Detach the coolant hose. Use a crowbar.



Replacement: engine thermostat – BMW E39 touring. Tip from AUTODOC:

- Caution! Coolant may leak out of the coolant lines and thermostat housing.

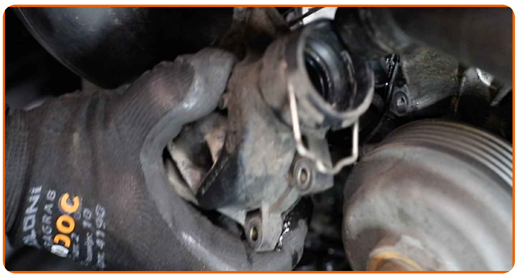
26 Clean the thermostat housing fasteners. Use all-purpose cleaning spray.



27 Unscrew the thermostat housing fasteners. Use a drive socket #10. Use a ratchet wrench.



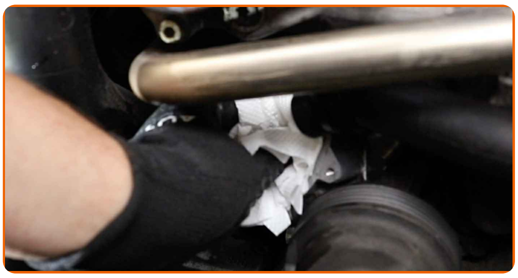
28 Remove the thermostat housing. Use a crowbar.



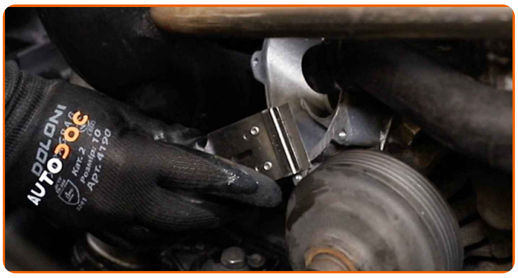
AUTODOC recommends:

- Replacement: engine thermostat – BMW E39 touring. Do not use excessive force when removing the part as this may damage it.
- Caution! Coolant may leak out of the coolant lines and thermostat housing.

29 Cover the thermostat housing with a microfibre cloth to prevent dirt and foreign objects entering the system.



30 Clean the thermostat housing mounting seat. Use a seal scraper. Use all-purpose cleaning spray.

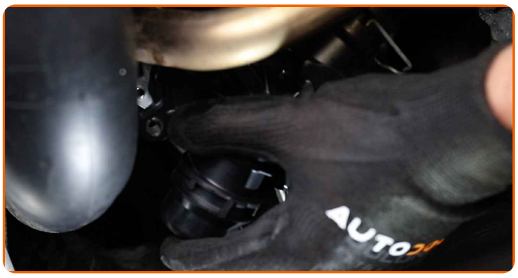


31 Treat the thermostat housing mounting seat. Use a sealant.



32 Remove the microfibre cloth from the thermostat housing.

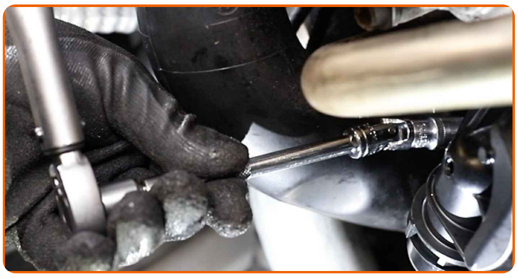
33 Install the new thermostat housing.



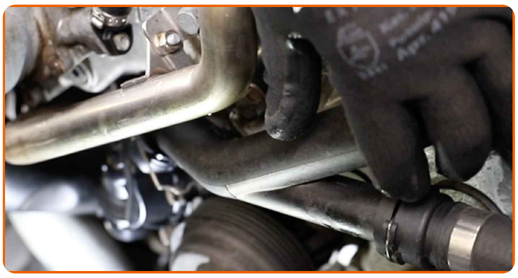
AUTODOC recommends:

- Replacement: engine thermostat – BMW E39 touring. Do not use excessive force during installation. This may damage the part.

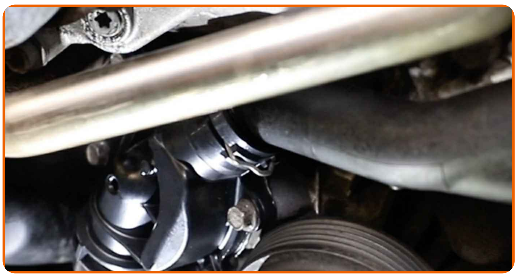
34 Tighten the thermostat housing fasteners. Use a drive socket #10. Use a torque wrench. Tighten it to 7 nm torque.



35 Attach the coolant hose.



36 Secure the coolant hose clamp.



37 Tighten the coolant hose fastener. Use a drive socket #10. Use a torque wrench. Tighten it to 6 nm torque.



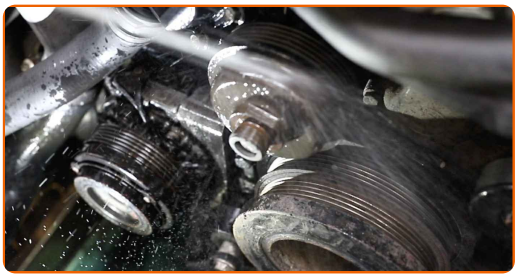
38 Attach the coolant hose.



39 Secure the coolant hose clamp.



40 Clean the mounting seats of the V-ribbed belt. Use all-purpose cleaning spray.



41 Pull aside the V-ribbed belt tensioner pulley. Use a combination spanner #26.



42 Install the V-ribbed belt.



Replacement: engine thermostat – BMW E39 touring. Tip from AUTODOC experts:

- Make sure that the V-ribbed belt fits all pulleys snugly.

43 Return the tensioner pulley to its initial position.

44 Pull aside the V belt tensioner pulley. Use a combination spanner #16.

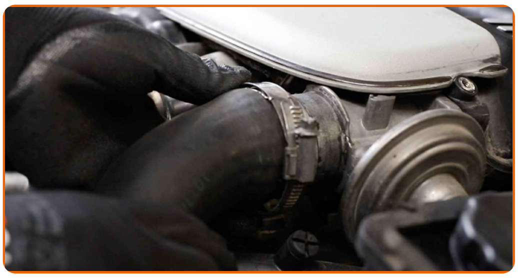


45 Install the V belt.

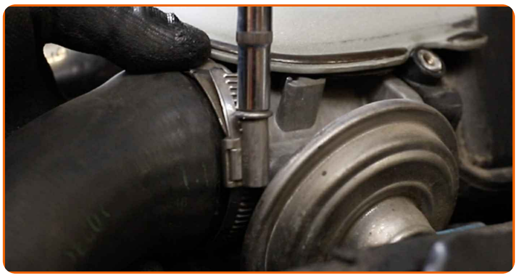


46 Return the tensioner pulley to its initial position.

47 Attach the intercooler hose.



48 Screw in the intercooler hose clamp. Use a drive socket #7. Use a ratchet wrench.



49 Install the cooling fan. Install the fan shroud.



50 Tighten the cooling fan fastener. Use a combination spanner #32 (2 pieces). Use a torque wrench. Tighten it to 33 Nm torque.



51 Install the fan shroud clips.



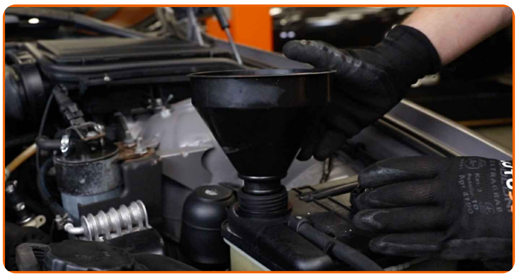
52 Open the coolant system bleed screw. Use a flat screwdriver.



53 Remove the coolant reservoir cap.



54 Insert the funnel.



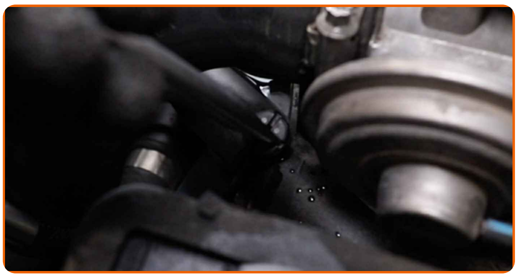
55 Pour coolant in the coolant reservoir.



Replacement: engine thermostat – BMW E39 touring. AUTODOC experts recommend:

- Only use the coolant recommended by the manufacturer.
- The coolant level should be at the MAX mark.
- Wait until the air goes out of the system.

56 Close the coolant system bleed screw. Use a flat screwdriver.



57 Run the engine for a few minutes. This should be done in order to remove residual air from the cooling system and to check if the components are operating correctly.

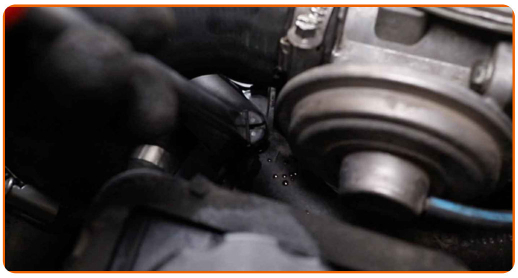


58 Shut off the engine.

59 Check the coolant level. If necessary, top up to the required level.



60 Open the coolant system bleed screw. Use a flat screwdriver.



Replacement: engine thermostat – BMW E39 touring. Tip from AUTODOC experts:

- This should be done in order to remove residual air from the cooling system and to check if the components are operating correctly.

61 Close the coolant system bleed screw. Use a flat screwdriver.



62 Install the coolant reservoir cap.

63 Screw on the coolant reservoir cap.



64 Install the engine cover and secure it.



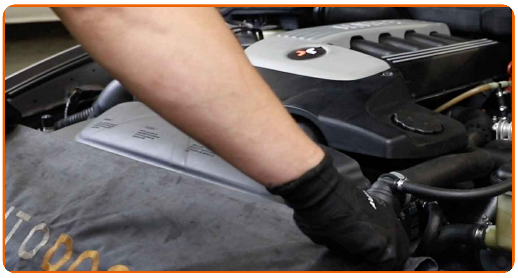
AUTODOC recommends:

- Replacement: engine thermostat – BMW E39 touring. Do not use excessive force during installation. This may damage the part.

65 Screw in the engine cover fasteners. Use HEX No.H5. Use a ratchet wrench.



66 Remove the fender protection cover.



67 Close the hood.



WELL DONE!

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